United States
Department of
Agriculture

Forest Service

**Southern
Research Station**

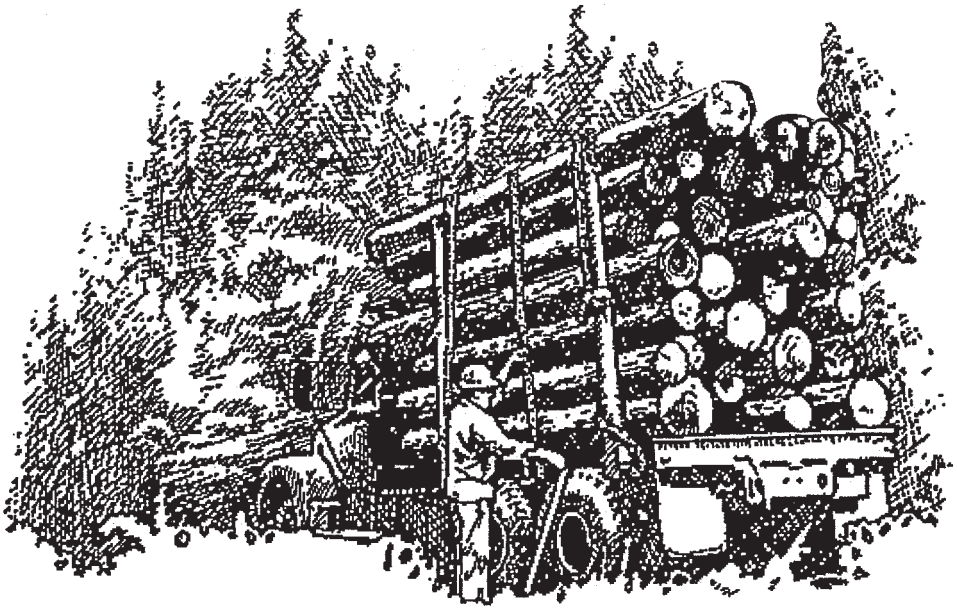
Resource Bulletin
SRS–155

Virginia's Timber Industry—An Assessment of Timber Product Output and Use, 2007

**Jason A. Cooper and
Charles W. Becker**

The Authors:

Jason A. Cooper, Forester, U.S. Forest Service, Southern Research Station, Knoxville, TN 37919;
Charles W. Becker, Staff Forester, Utilization and Marketing, Virginia Department of Forestry, Charlottesville, VA 22903.



July 2009

Southern Research Station
200 W.T. Weaver Blvd.
Asheville, NC 28804

Foreword

This report contains the findings of a 2007 canvass of all primary wood-using plants in Virginia, and presents changes in product output and residue use since 2005. It complements the Forest Inventory and Analysis periodic inventory of volume and removals from the State's timberland. The canvass was conducted to determine the amount and source of wood receipts and annual timber product drain, by county, in 2007 and to determine interstate and cross-regional movement of industrial roundwood. Only primary wood-using mills were canvassed. Primary mills are those that process roundwood in log or bolt form or as chipped roundwood. Examples of industrial roundwood products are saw logs, pulpwood, veneer logs, poles, and logs used for composite board products. Mills producing products from residues generated at primary and secondary processors were not canvassed. Trees chipped in the woods were included in the estimate of timber drain only if they were delivered to a primary domestic manufacturer.

A 100-percent canvass of all wood processors in Virginia was conducted in 2008 to obtain information for 2007. In addition, roundwood from out-of-State mills known to be using logs or bolts harvested from Virginia timberland was incorporated into Virginia production estimates. Each mill was canvassed by mail or through personal contact at plant locations. Telephone contacts followed mailed questionnaire responses when additional information or clarification of a response was necessary. In the event of a nonresponse, data collected in previous surveys were updated using current data collected for mills of similar size, product type, and location. Surveys for all timber products other than pulpwood began in 1965, and are currently conducted every 2 years.

Pulpwood production data were taken from an annual canvass of all southern pulpmills. Medium density fiberboard, insulating board, and hardboard plants were included in this survey.

Acknowledgments

The authors thank John H. Pemberton and Tracy D. McDonald for review and comments; Carolyn Steppleton and Michael Howell for their tireless efforts in processing and accuracy of the data; Helen Beresford for timber product output database maintenance and support; Anne Jenkins, Janet Griffin, Sharon Johnson, and Charlene Walker for tables, graphs, and statistical checking; and the Southern Research Station (SRS) Technical Publications Team for editorial review, styling, and publication of this report.

The SRS gratefully acknowledges the cooperation and assistance provided by the Virginia Department of Forestry in collecting mill data. Appreciation is also extended to forest industry and mill managers for providing timber products information.

Timber Product Output Database Retrieval System

The Forest Inventory and Analysis (FIA) Research Work Unit of the USDA Forest Service developed the Timber Product Output (TPO) Database Retrieval System to help customers answer questions about timber harvesting and use in the Southern Region. This system acts as an interface to a standard set of consistently coded TPO data for each State and county in the region and Nation. This regional and national set of TPO data consists of 11 variables that describe for each county the roundwood products harvested, logging residues left in the woods, other timber removals (i.e. land clearing and reserved timber removals), and wood and bark residues generated by the county's primary wood-using mills. The system is available through the FIA Web site: http://srsfia2.fs.fed.us/.

The database is well documented and easy to use. The retrieval system allows the user to select the TPO variables of interest and generate a standard set of timber products, removals, and mill residue tables for the specified resource area, State, or region. The system has been logically divided into two sections to assist the user in making specific data requests. In section 1, the user will be asked to define the resource area, and section 2 generates tables for the specified area. In each section, the user is asked to supply specific options that will serve to customize the database retrieval.

There are four options available for defining the geographic area of interest. Each option provides an increasing level of detail. The region, subregion, State, or county defines an area. The user selects the option that best suits the level of detail required. Users who select county as an option should be aware that some counties have been combined due to data sensitivity. These combined counties are identified with asterisks in the output tables.

The TPO contacts are listed to provide additional explanation or clarification.

Tony Johnson
Southern Research Station
USDA Forest Service
4700 Old Kingston Pike
Knoxville, TN 37919
tjohnson09@fs.fed.us
865-862-2042

Helen Beresford
Southern Research Station
USDA Forest Service
4700 Old Kingston Pike
Knoxville, TN 37919
hberesford@fs.fed.us
865-862-2091

James Bentley
Southern Research Station
USDA Forest Service
4700 Old Kingston Pike
Knoxville, TN 37919
jbentley@fs.fed.us
865-862-2056

Carolyn Steppleton
Southern Research Station
USDA Forest Service
200 W.T. Weaver Blvd.
Asheville, NC 28804
csteppleton@fs.fed.us
828-257-4848

Contents

[a] All tables in this report are available in Microsoft® Excel workbook files. Upon request, these files will be supplied in the format the customer requests. The use of trade or firm names in this publication is for reader information and does not imply endorsement by the U.S. Department of Agriculture of any product or service.

.

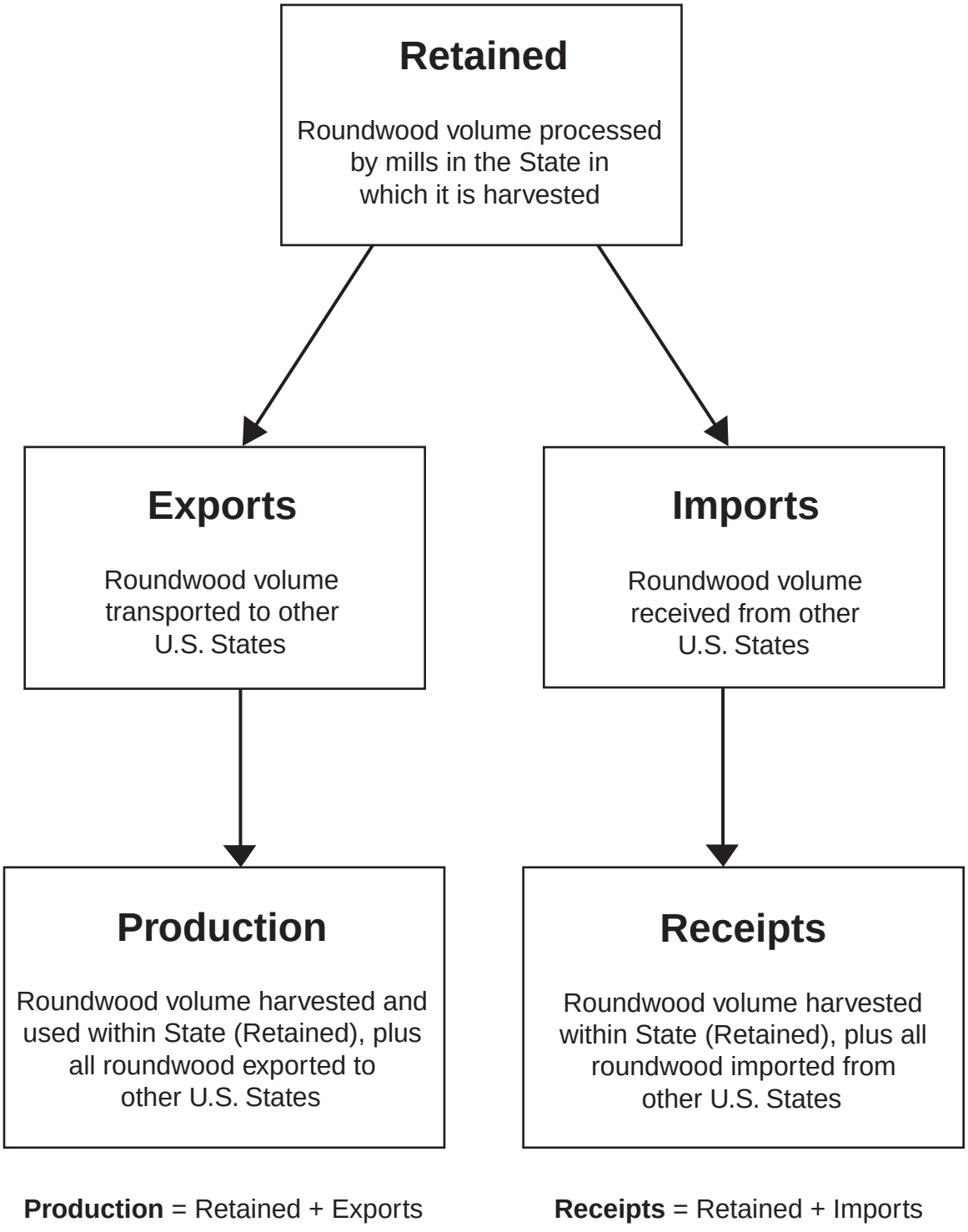


Figure 1—Movement of roundwood exports and imports within the United States.

Virginia's Timber Industry—An Assessment of Timber Product Output and Use, 2007

Jason A. Cooper and Charles W. Becker

Output of Industrial Timber Products

Note: Certain terms used in this report—retained, export, import, production, and receipts—have specialized meanings and relationships unique to the Forest Inventory and Analysis Units across the country that deal with timber product output (TPO) (fig. 1).

All Products

- TPO from roundwood was down 8 percent, from 503 million cubic feet to 464 million cubic feet, while output of utilized plant byproducts declined 3 percent, from 179 to 173 million cubic feet.
- Output of softwood roundwood products decreased 6 percent to 253 million cubic feet, and output of hardwood roundwood products declined 10 percent to 211 million cubic feet (fig. 2).
- Saw logs and pulpwood were the principal roundwood products in 2007. Combined output of these two products totaled 382 million cubic feet and accounted for 82 percent of the State's total roundwood output (fig. 3).
- Total receipts at Virginia mills, which included roundwood harvested and retained in the State and roundwood imported from other States, decreased 35 million cubic feet to 480 million cubic feet. At the same time, the number of primary roundwood-using plants in Virginia declined from 196 in 2005 to 179 in 2007 (fig. 4).
- Across all products, 84 percent of roundwood harvested was retained for processing at Virginia mills. Exports of roundwood to other States amounted to 73 million cubic feet, while imports of roundwood amounted to 89 million cubic feet making the State a net importer of roundwood. Tables A.8 to A.12 show exports to and imports from other States by individual product type.

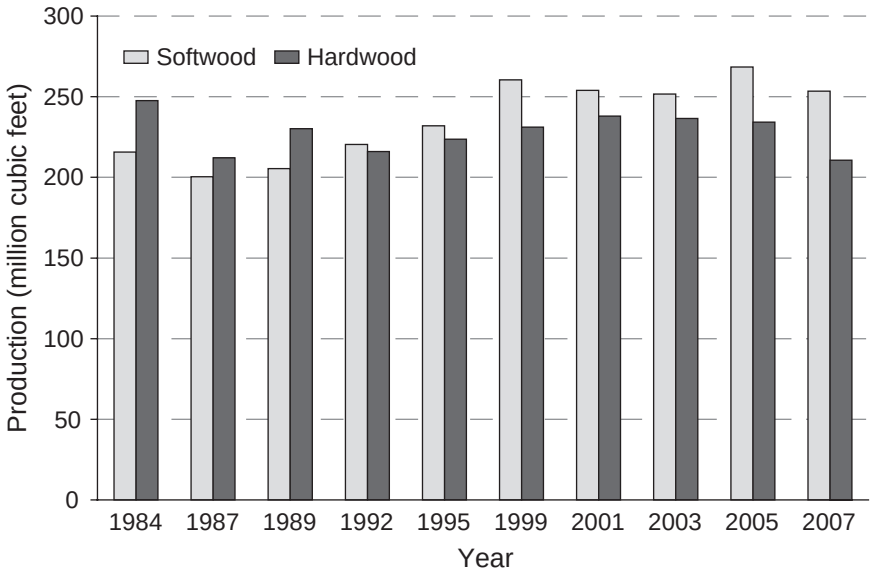


Figure 2—Roundwood production for all products by species group and year (see page 8 for references for individual years), Virginia.

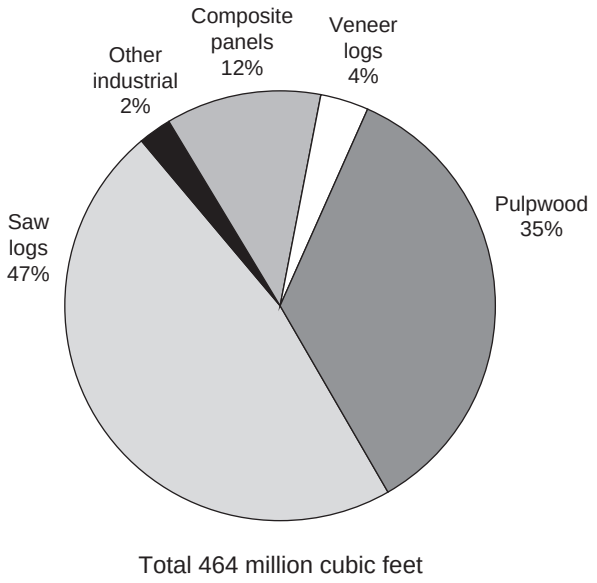


Figure 3—Roundwood production by type of product, Virginia, 2007.

Saw Logs

- At 219 million cubic feet, saw logs accounted for 47 percent of the State's total roundwood products. Output of softwood saw logs declined 6.9 million cubic feet to 100 million cubic feet (546 million board feet, International ¼-inch rule) and hardwood saw logs declined 2 million cubic feet to 119 million cubic feet (728 million board feet, International ¼-inch rule) (fig. 5).

- In 2007, Virginia had 155 sawmills, a net loss of 13 mills since 2005. The total number of sawmills does not include several one-person sawmills not included in this survey. Total saw-log receipts decreased 17 million cubic feet to 214 million cubic feet. Softwood saw-log receipts decreased 12 percent to 93 million cubic feet, while hardwoods decreased only 3 percent to 121 million cubic feet. Of the 155 mills operating in 2007, 16 percent had receipts of < 1 million board feet, while 47 percent had receipts of > 5 million board feet. These 73 mills accounted for 87 percent of total sawmill receipts.

- Virginia retained 88 percent of its saw-log production for in-State manufacture, with saw-log exports exceeding imports by 5 million cubic feet in 2007.

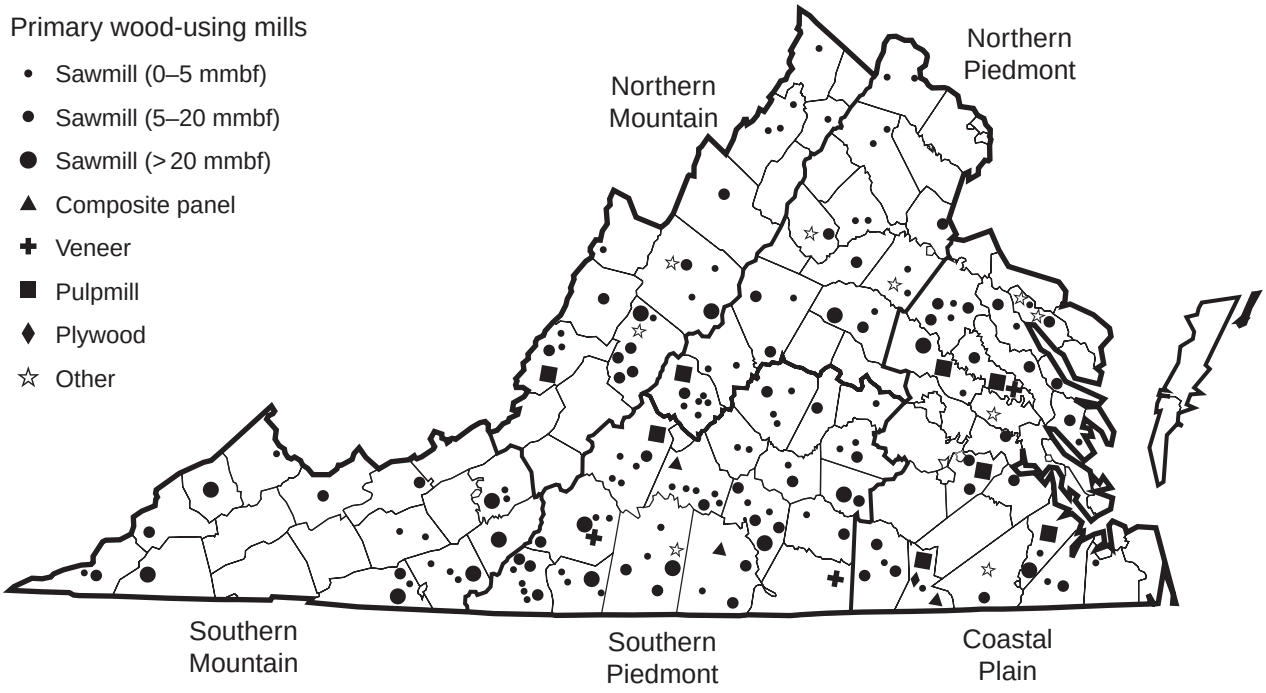


Figure 4—Primary wood-using mills by region, Virginia, 2007.

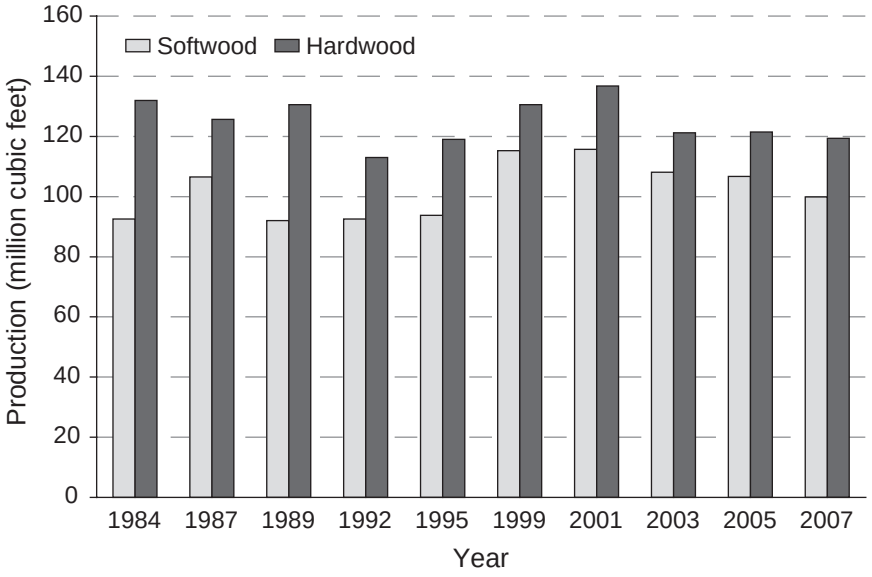


Figure 5—Roundwood saw-log production by species group and year (see page 8 for references for individual years), Virginia.

Pulpwood

- Pulpwood production, including chipped roundwood, decreased 37 million cubic feet to 162 million cubic feet and accounted for 35 percent of the State's total roundwood TPO. Softwood output was down 12 percent to 84.6 million cubic feet (1.1 million cords), and hardwood output decreased 25 percent to 77.6 million cubic feet (1 million cords) (fig. 6).

- Eight pulpmill facilities were operating and receiving roundwood in Virginia in 2007, same as in 2005. Total pulpwood receipts for these mills decreased 28 million cubic feet, or 14 percent, to 175 million cubic feet, accounting for 36 percent of total receipts for all mills.

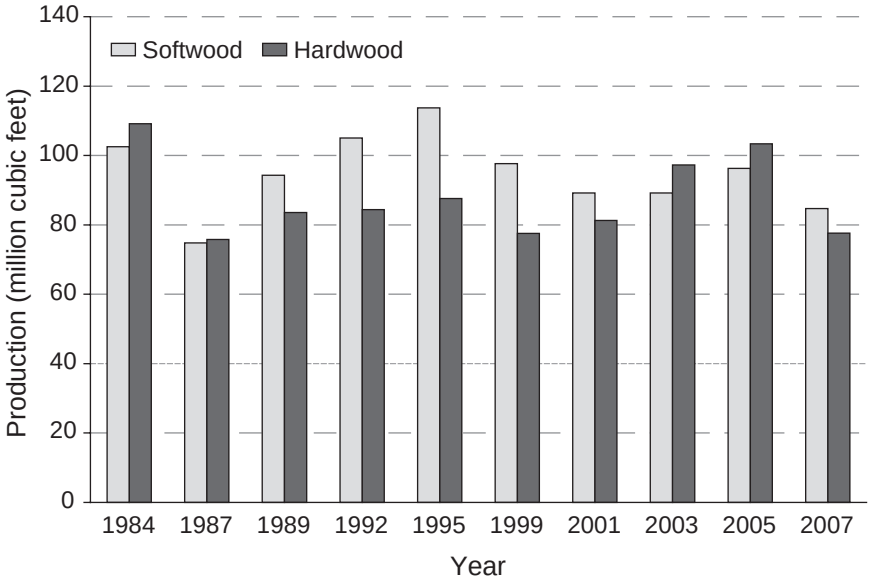


Figure 6—Roundwood pulpwood production by species group and year (see page 8 for references for individual years), Virginia.

- Seventy-eight percent of roundwood cut for pulpwood was retained for processing at Virginia pulpmills. Roundwood pulpwood accounted for 50 percent of total known exports and 55 percent of total imports. Roundwood pulpwood exports amounted to 36 million cubic feet, while imports amounted to 49 million cubic feet, making the State a net importer of roundwood pulpwood.

Veneer Logs

- Output of veneer logs in 2007 totaled 17 million cubic feet and accounted for 4 percent of the State's total roundwood TPO volume. Softwood veneer-log production was up 13 percent to 13 million cubic feet (79 million board feet, International ¼-inch rule), while output of hardwood veneer-log production declined 16 percent to 4 million cubic feet (26 million board feet, International ¼-inch rule) (fig. 7).

- Four veneer mills were operating in Virginia in 2007, same in 2005. Total receipts for veneer logs decreased by 9 percent to 18 million cubic feet.

- Virginia retained 76 percent of its veneer-log production for processing at veneer mills within State. Imports amounted to 5 million cubic feet, while exports totaled 4 million cubic feet.

Composite Panels

- Roundwood harvested from Virginia's forests for composite panels decreased 6 percent and totaled 54 million cubic feet. Softwood output was down 5 percent to 51 million cubic feet (690,000 cords), and hardwood production dropped 15 percent to 3.6 million cubic feet (47,000 cords) (fig. 8).

- The number of composite panel mills operating in Virginia remained the same at three. Total receipts for these mills were stable 59 million cubic feet, or about 12 percent of the State's total receipts.

- Eighty-seven percent of the roundwood production harvested for composite panels was retained for processing at Virginia's mills. Imports amounted to 12 million cubic feet, while exports totaled 7 million cubic feet, making the State a net importer of logs used for composite panels.

Other Industrial Products

- Roundwood harvested for other industrial uses such as poles, posts, mulch, firewood, logs for log homes, and all other industrial products increased from 1.4 to 11 million cubic feet and accounted for 2 percent of the State's TPO output. Softwood made up 48 percent of the other industrial product volume.

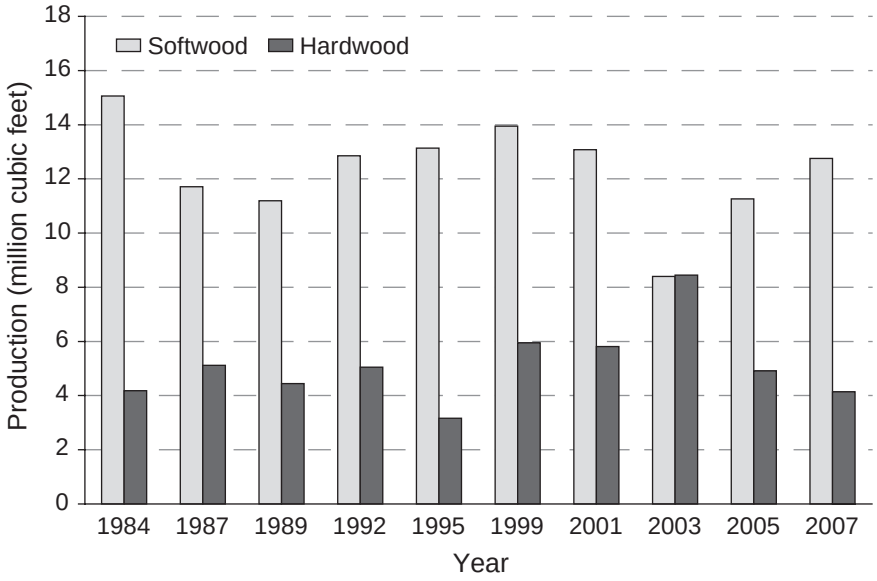


Figure 7—Roundwood veneer-log production by species group and year (see page 8 for references for individual years), Virginia.

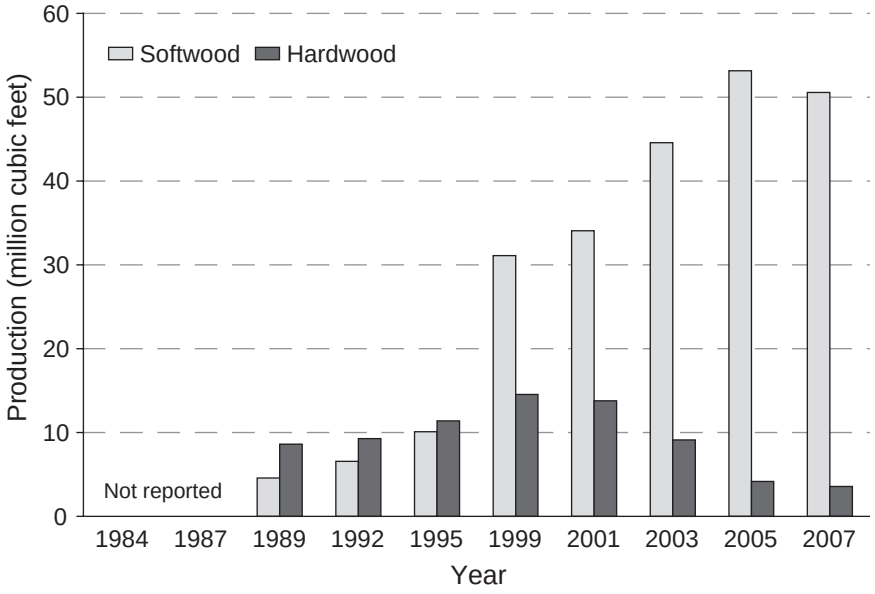


Figure 8—Roundwood production for composite panels by species group and year (see page 8 for references for individual years), Virginia.

- The number of plants producing other industrial products decreased from 13 in 2005 to 9 in 2007. Combined receipts of other industrial products from softwood and hardwood totaled 13 million cubic feet.

- Virginia was a net importer of roundwood used for other industrial products; 2 million cubic feet were imported, while only 43,000 cubic feet were exported to other States.

Plant Byproducts

- In 2007, processing of primary products in Virginia mills generated >175 million cubic feet of wood and bark residues. Coarse residues from all primary products amounted to 70 million cubic feet, while bark volume totaled 53 million cubic feet. Collectively, sawdust and shavings made up 30 percent of total residues, or 51 million cubic feet (fig. 9).

- The processing of saw logs generated 125 million cubic feet of mill residues, accounting for 71 percent of the total residues produced (fig. 10).

- Virtually all the wood and bark residues were used for a product: only about 1 percent was not used, while 44 percent of the residues were used for industrial fuel (fig. 11). Fifty-three million cubic feet, or 75 percent, of the coarse residues were used for fiber products. Most of the bark was used for industrial fuel or other miscellaneous products, while 66 percent of the sawdust and shavings were used for industrial fuel.

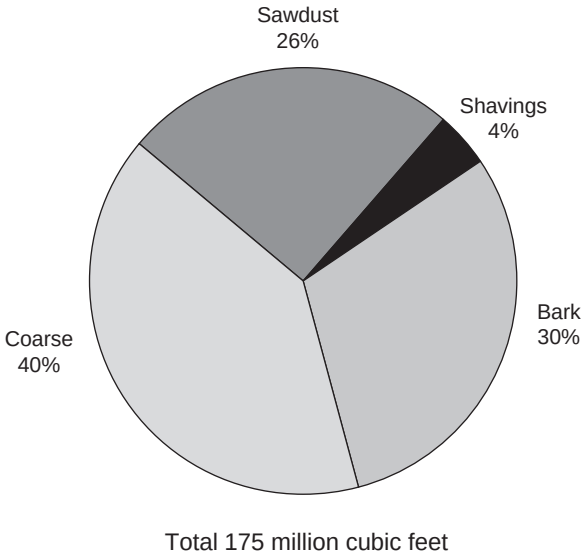


Figure 9—Primary mill residue by residue type, Virginia, 2007.

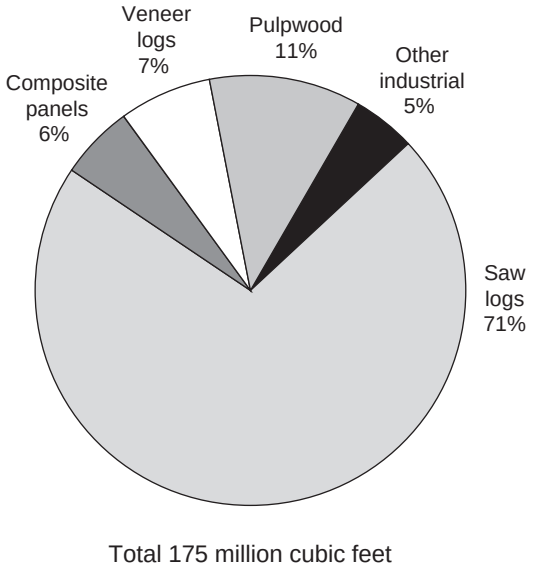


Figure 10—Primary mill residue produced by roundwood type, Virginia, 2007.

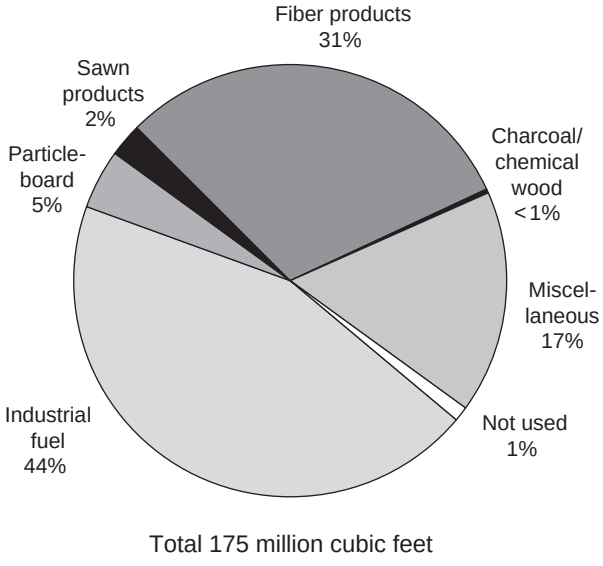


Figure 11—Disposal of residue by product, Virginia, 2007.

County Data

- Table A.15 shows softwood and hardwood product output by county and individual product type. Seven counties (Brunswick, Buckingham, Charlotte, Halifax, Pittsylvania, Southampton, and Sussex) had combined softwood and hardwood product output of > 15 million cubic feet each. These seven counties total product output amounted to 147 million cubic feet and accounted for 32 percent of the State's total product output.

Total Roundwood Output

Using the most recent inventory data for Virginia, product output by source, ownership, and detailed species group was estimated.

Source

- In addition to the 464 million cubic feet of roundwood output for industrial roundwood, an estimated 39 million cubic feet was harvested for domestic fuelwood, bringing Virginia's total roundwood output to 503 million cubic feet.

- An estimated 94 percent of total roundwood output was considered growing-stock volume (sawtimber and poletimber) from timberland sources. Other sources (such as saplings; stumps, tops, and limbs of trees on timberland; and trees on nonforest land) contributed an estimated 29 million cubic feet, or 6 percent of total roundwood output (fig. 12).

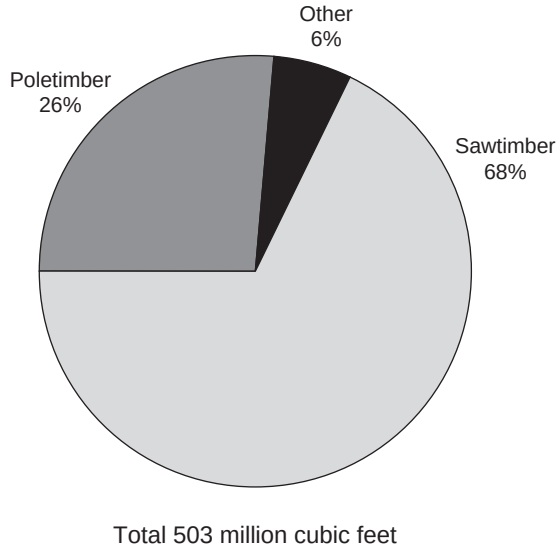


Figure 12—Roundwood output by source, Virginia, 2007.

Ownership

- An estimated 446 million cubic feet, or 89 percent, of the total roundwood output came from nonindustrial private forest lands. Forest industry lands contributed 39 million cubic feet, or 8 percent of the output. Public lands made up the remaining 3 percent, or 17 million cubic feet (fig. 13).

Species

- The loblolly and shortleaf pine group provided the most volume of any softwood species group, or 190 million cubic feet and accounted for 74 percent of the total softwood output. The other yellow pine types accounted for 17 percent of the softwood output (fig. 14). In hardwoods, the red oak and white oak groups combined accounted for 94 million cubic feet, or 38 percent of total hardwood output (fig. 15). Yellow-poplar accounted for another 65 million cubic feet, or 26 percent of total hardwood output.

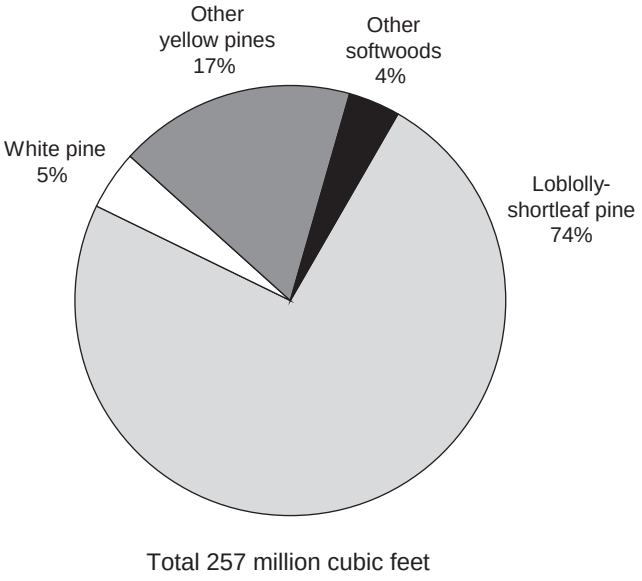


Figure 14—Roundwood output by softwood species group, Virginia, 2007.

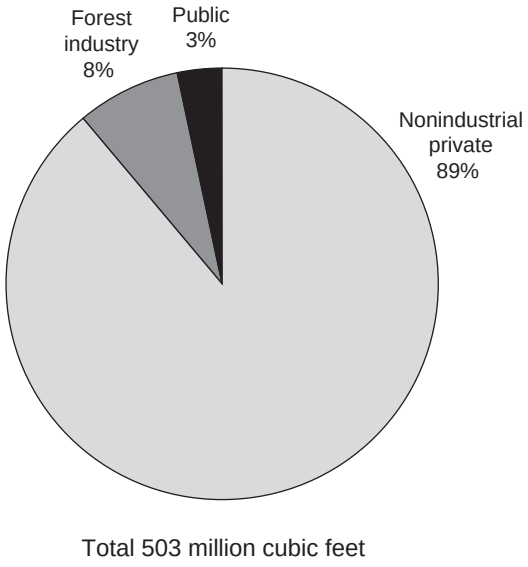


Figure 13—Roundwood output by ownership, Virginia, 2007.

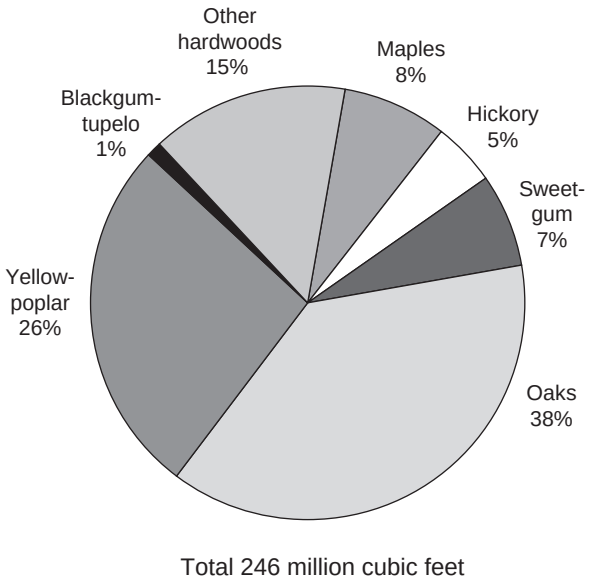


Figure 15—Roundwood output by hardwood species group, Virginia, 2007.

References

Bentley, J.W.; Johnson, T.G.; Becker, C.W. 2002. Virginia's timber industry—an assessment of timber product output and use, 1999. Resour. Bull. SRS–74. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 41 p. [1999].

Howell, M.; Becker, C.W. 2004. Virginia's timber industry—an assessment of timber product output and use, 2001. Resour. Bull. SRS–95. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 40 p. [2001].

Howell, M.; Becker, C.W. 2006. Virginia's timber industry—an assessment of timber product output and use, 2003. Resour. Bull. SRS–108. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 44 p. [2003].

Hutchins, C.C., Jr. 1992. Changes in output of industrial timber products in Virginia, 1987-1989. Resour. Bull. SE–129. Asheville, NC: U.S. Department of Agriculture Forest Service, Southeastern Forest Experiment Station. 18 p. [1987, 1989].

Johnson, T.G. 1994. Virginia's timber industry—an assessment of timber product output and use, 1992. Resour. Bull. SE–145. Asheville, NC: U.S. Department of Agriculture Forest Service, Southeastern Forest Experiment Station. 32 p. [1992].

Johnson, T.G.; Becker, C.W. 2007. Virginia's timber industry—an assessment of timber product output and use, 2005. Resour. Bull. SRS–125. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 34 p. [2005].

Johnson, T.G.; Jenkins, A.; Scrivani, J.A.; Foreman, J.M. 1997. Virginia's timber industry—an assessment of timber product output and use, 1995. Resour. Bull. SRS–19. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 37 p. [1995].

Little, E.L., Jr. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture. 375 p.

U.S. Department of Agriculture Forest Service. Product drain by county, product, and species. 6 p. Unpublished data. On file with: Southern Research Station, USDA Forest Service, Forest Inventory and Analysis Research Work Unit, 4700 Old Kingston Pike, Knoxville, TN 37919. [1984].

Glossary

Board foot. A unit of measure applied to lumber that is 1-foot long, 1-foot wide, and 1-inch thick (or its equivalent) and also associated with roundwood as to its potential yield of such products.

Byproducts. Primary wood products, e.g., pulp chips, animal bedding, and fuelwood, recycled from mill residues**.**

Composite panels. Roundwood products manufactured into chips, wafers, strands, flakes, shavings, or sawdust and then reconstituted into a variety of panel and engineered lumber products.

Consumption. The quantity of a commodity, such as pulpwood, utilized by a particular mill or group of mills.

Domestic fuelwood. The volume of roundwood harvested to produce heat for residential settings.

Drain. The volume of roundwood removed from any geographic area where timber is grown.

Exports. The volume of domestic roundwood utilized by mills outside the State where timber was cut.

Fiber products. Byproducts used in the manufacture of pulp, paper, paperboard, and composite products, such as chipboard.

Growing-stock removals. The growing-stock volume removed from poletimber and sawtimber trees in the timberland inventory. (Note: Includes volume removed for roundwood products, logging residues, and other removals.)

Growing-stock trees. Living trees of commercial species classified as sawtimber, poletimber, saplings, and seedlings. Growing-stock trees must contain at least one 12-foot or two 8-foot logs in the saw-log portion, currently or potentially (if too small to qualify). The log(s) must meet dimension and merchantability standards and have, currently or potentially, one-third of the gross board-foot volume in sound wood.

Growing-stock volume. The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches d.b.h. from a 1-foot stump to a minimum 4.0-inch top d.o.b. of the central stem.

Hardwoods. Dicotyledonous trees, usually broadleaf and deciduous.

Soft hardwoods. Hardwood species with an average specific gravity of 0.50 or less, such as gums, yellow-poplar, cottonwoods, red maple, basswoods, and willows.

Hard hardwoods. Hardwood species with an average specific gravity > 0.50, such as oaks, hard maples, hickories, and beech.

Imports. The volume of domestic roundwood delivered to a mill or group of mills in a specific State but harvested outside that State.

Industrial fuelwood. A roundwood product, with or without bark, used to generate energy at a manufacturing facility such as a wood-using mill.

Industrial roundwood products. Any primary use of the main stem of a tree, such as saw logs, pulpwood, veneer logs, intended to be processed into primary wood products such as lumber, wood pulp, sheathing, at primary wood-using mills.

International ¼-inch rule. A log rule or formula for estimating the board-foot volume of logs, allowing ½-inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In the form used by FIA, a ¼-inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

Log. A primary forest product harvested in long, primarily 8-, 12-, and 16-foot lengths.

Logging residues. The unused merchantable portion of growing-stock trees cut or destroyed during logging operations.

Merchantable portion. That portion of live trees 5.0 inches d.b.h. and larger between a 1-foot stump and a minimum 4.0-inch top d.o.b. on the central stem. That portion of primary forks from the point of occurrence to a minimum 4.0-inch top d.o.b. is included.

Merchantable volume. Solid-wood volume in the merchantable portion of live trees.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land. Land that has never supported forests and land formerly forested where timber production is precluded by development for other uses.

Nongrowing-stock sources. The net volume removed from the nongrowing-stock portions of poletimber and sawtimber trees (stumps, tops, limbs, cull sections of central stem) and from any portion of a rough, rotten, sapling, dead, or nonforest tree.

Other forest land. Forest land other than timberland and productive reserved forest land. It includes available and reserved forest land that is incapable of producing annually 20 cubic feet per acre of industrial wood under natural conditions because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other products. A miscellaneous category of roundwood products, e.g., cooperage, excelsior, shingles, and mill residue byproducts (charcoal, bedding, mulch, etc.).

Other removals. The growing-stock volume of trees removed from the inventory by cultural operations such as timber stand improvement, land clearing, and other changes in land use, resulting in the removal of the trees from timberland.

Other sources. (See: Nongrowing-stock sources.)

Ownership. The property owned by one ownership unit, including all parcels of land in the United States.

National forest land. Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

Forest industry land. Land owned by companies or individuals operating primary wood-using plants.

Nonindustrial private forest (NIPF) land. Privately owned land excluding forest industry land.

Corporate. Owned by corporations, including incorporated farm ownerships.

Individual. All lands owned by individuals, including farm operators.

Other public. An ownership class that includes all public lands except national forests.

Miscellaneous Federal land. Federal land other than national forests.

State, county, and municipal land. Land owned by States, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Plant residues. Wood material generated in the production of timber products at primary manufacturing plants.

Coarse residues. Material, such as slabs, edgings, trim, veneer cores and ends, which is suitable for chipping.

Fine residues. Material, such as sawdust, shavings, and veneer residue, which is not suitable for chipping.

Plant byproducts. Residues (coarse or fine) used in the further manufacture of industrial products for consumer use, or as fuel.

Unused plant residues. Residues (coarse or fine) that are not used for any product, including fuel.

Poletimber-size trees. Softwoods 5.0 to 8.9 inches d.b.h. and hardwoods 5.0 to 10.9 inches d.b.h.

Posts, poles, and pilings. Roundwood products milled (cut or peeled) into standard sizes (lengths and circumferences) to be put in the ground to provide vertical and lateral support in buildings, foundations, utility lines, and fences. May also include nonindustrial (unmilled) products.

Primary wood-using plants. Industries that convert round-wood products (saw logs, veneer logs, pulpwood, etc.) into primary wood products, such as lumber, veneer or sheathing, wood pulp.

Production. The total volume of known roundwood harvested from land within a State, regardless of where it is consumed. Production is the sum of timber harvested and used within a State, and all roundwood exported to other States.

Pulpwood. A roundwood product that will be reduced to individual wood fibers by chemical or mechanical means. The fibers are used to make a broad generic group of pulp products that includes paper products, as well as fiberboard, insulating board, and paperboard.

Receipts. The quantity or volume of industrial roundwood received at a mill or by a group of mills in a State, regardless of the geographic source. Volume of roundwood receipts is equal to the volume of roundwood retained in a State plus roundwood imported from other States.

Retained. Roundwood volume harvested from and processed by mills within the same State.

Rotten trees. Live trees of commercial species not containing at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of rot or missing sections, and with less than one-third of the gross board-foot tree volume in sound material.

Rough trees. Live trees of commercial species not containing at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of roughness, poor form, splits, and cracks, and with less than one-third of the gross board-foot tree volume in sound material; and live trees of noncommercial species.

Roundwood (roundwood logs). Logs, bolts, or other round sections cut from trees for industrial manufacture or consumer uses.

Roundwood chipped. Any timber cut primarily for industrial manufacture, delivered to nonpulpmills, chipped, and then sold to pulpmills for use as fiber. Includes tops, jump sections, whole trees, and pulpwood sticks.

Roundwood product drain. That portion of total drain used for a product.

Roundwood products. Any primary product, such as lumber, veneer, composite panels, poles, pilings, pulp, or fuelwood that is produced from roundwood.

Salvable dead trees. Standing or downed dead trees that were formerly growing stock and considered merchantable. Trees must be at least 5.0 inches d.b.h. to qualify.

Saplings. Live trees 1.0 to 5.0 inches d.b.h.

Saw log. A roundwood product, usually 8 feet in length or longer, processed into a variety of sawn products such as lumber, cants, pallets, railroad ties, and timbers.

Saw-log portion. The part of the bole of sawtimber trees between a 1-foot stump and the saw-log top.

Saw-log top. The point on the bole of sawtimber trees above which a conventional saw log cannot be produced. The minimum saw-log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods for FIA standards.

Sawtimber-size trees. Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger.

Sawtimber volume. Growing-stock volume in the saw-log portion of sawtimber-sized trees in board feet (International ¼-inch rule).

Seedlings. Trees < 1.0 inch d.b.h. and > 1 foot tall for hardwoods, > 6 inches tall for softwoods, and > 0.5 inch in diameter at ground level for longleaf pine.

Select red oaks. A group of several red oak species composed of cherrybark, Shumard, and northern red oaks. Other red oak species are included in the "other red oaks" group.

Select white oaks. A group of several white oak species composed of white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks. Other white oak species are included in the "other white oaks" group.

Softwoods. Coniferous trees, usually evergreen, having leaves that are needles or scale like.

Standard cord. A unit of measure applied to roundwood, usually bolts or split wood. It is a stack of wood 4 feet high, 4 feet wide, and 8 feet long encompassing 128 cubic feet of wood, bark, and air space. This usually translates to approximately 75.0 to 81.0 cubic feet of solid wood for pulpwood, because pulpwood is more uniform.

Standard unit. A unit measure applied to roundwood timber products. Board feet (International ¼-inch rule) is the standard unit used for saw logs and veneer; cords are used for pulpwood, composite panel, and fuelwood; hundred pieces for poles; thousand pieces for posts; and thousand cubic feet for all other miscellaneous forest products.

Timberland. Forest land capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization.

Timber product output. The total volume of roundwood products from all sources plus the volume of byproducts recovered from mill residues (equals roundwood product drain).

Timber products. Roundwood products and byproducts.

Timber removals. The total volume of trees removed from the timberland inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use. (Note: Includes roundwood products, logging residues, and other removals.)

Tree. Woody plants having one erect perennial stem or trunk at least 3 inches d.b.h., a more or less definitely formed crown of foliage, and a height of at least 13 feet (at maturity).

Upper-stem portion. The part of the main stem of saw-timber trees above the saw-log top and the minimum top diameter of 4.0 inches outside bark, or to the point where the main stem breaks into limbs.

Utilization studies. Studies conducted on active logging operations to develop factors for merchantable portions of trees left in the woods (logging residues), logging damage, and utilization of the unmerchantable portion of growing-stock trees and nongrowing-stock trees.

Veneer log. A roundwood product either rotary cut, sliced, stamped, or sawn into a variety of veneer products such as plywood, finished panels, veneer sheets, or sheathing.

Weight. A unit of measure for mill residues, expressed as oven-dry tons (2,000 oven-dry pounds).

Conversion Factors[a]

Saw logs	
Softwood	0.18282 cubic foot = 1 board foot
	5.47 board feet = 1 cubic foot
Hardwood	0.16393 cubic foot = 1 board foot
	6.10 board feet = 1 cubic foot
Veneer logs	
Softwood	0.16129 cubic foot = 1 board foot
	6.20 board feet = 1 cubic foot
Hardwood	0.16000 cubic foot = 1 board foot
	6.25 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	73.3 cubic feet per cord
Hardwood	76.1 cubic feet per cord

[a] Conversion factors vary with stem size (d.b.h.) and species. The factors shown are for trees of average diameters removed in Virginia during the most recent survey period.

[b] Cubic feet of solid wood per cord.

Species List[a]

Common name	Scientific name[b]	Common name	Scientific name[b]
Softwoods		Hardwoods (continued)	
Atlantic white-cedar	*Chamaecyparis thyoides* (L.) B.S.P.	Sweetgum	*Liquidambar styraciflua* L.
Southern redcedar	*Juniperus silicicola* (Small) Bailey	Yellow-poplar	*Liriodendron tulipifera* L.
Eastern redcedar	*J. virginiana* L.	Osage-orange	*Maclura pomifera* (Raf.) Schneid.
Shortleaf pine	*Pinus echinata* Mill.	Cucumbertree	*Magnolia acuminata* L.
Slash pine	*P. elliottii* Engelm.	Southern magnolia	*M. grandiflora* L.
Spruce pine	*P. glabra* Walt.	Bigleaf magnolia	*M. macrophylla* Michx.
Longleaf pine	*P. palustris* Mill.	Sweetbay	*M. virginiana* L.
Loblolly pine	*P. taeda* L.	Apple	*Malus* spp. Mill.
Virginia pine	*P. virginiana* Mill.	Chinaberry	*Melia azedarach* L.
Baldcypress	*Taxodium distichum* (L.) Rich.	White mulberry	*Morus alba* L.
		Red mulberry	*M. rubra* L.
Hardwoods		Water tupelo	*Nyssa aquatica* L.
Florida maple	*Acer barbatum* Michx.	Blackgum	*N. sylvatica* Marsh.
Boxelder	*A. negundo* L.	Swamp tupelo	*N. sylvatica* var. *biflora* (Walt.) Sarg.
Red maple	*A. rubrum* L.	Eastern hophornbeam	*Ostrya virginiana* (Mill.) K. Koch
Silver maple	*A. saccharinum* L.	Sourwood	*Oxydendrum arboreum* (L.) DC.
Sugar maple	*A. saccharum* Marsh.	Redbay	*Persea borbonia* (L.) Spreng.
Buckeye	*Aesculus* spp. L.	American sycamore	*Platanus occidentalis* L.
Ailanthus	*Ailanthus altissima* (Mill.) Swingle	Cottonwood	*Populus* spp. L.
Tung-oil tree	*Aleurites fordii* Hemsl.	Black cherry	*Prunus serotina* Ehrh.
Serviceberry	*Amelanchier* spp. Medic.	White oak	*Quercus alba* L.
River birch	*Betula nigra* L.	Scarlet oak	*Q. coccinea* Muenchh.
American hornbeam	*Carpinus caroliniana* Walt.	Southern red oak	*Q. falcata* Michx.
Hickory	*Carya* spp. Nutt.	Cherrybark oak	*Q. falcata* var. *pagodifolia* Ell.
Water hickory	*C. aquatica* (Michx. f.) Nutt.	Bluejack oak	*Q. incana* Bartr.
Bitternut hickory	*C. cordiformis* (Wangenh.) K. Koch	Turkey oak	*Q. laevis* Walt.
Pignut hickory	*C. glabra* (Mill.) Sweet	Laurel oak	*Q. laurifolia* Michx.
Pecan	*C. illinoensis* (Wangenh.) K. Koch	Overcup oak	*Q. lyrata* Walt.
Shellbark hickory	*C. laciniosa* (Michx. f.) Loud.	Swamp chestnut oak	*Q. michauxii* Nutt.
Nutmeg hickory	*C. myristiciformis* (Michx. f.) Nutt.	Chinkapin oak	*Q. muehlenbergii* Engelm.
Shagbark hickory	*C. ovata* (Mill.) K. Koch	Water oak	*Q. nigra* L.
Black hickory	*C. texana* Buckl.	Nuttall oak	*Q. nuttallii* Palmer
Mockernut hickory	*C. tomentosa* (Poir.) Nutt.	Oglethorpe oak	*Q. oglethorpensis* Duncan
Allegheny chinkapin	*Castanea pumila* Mill.	Pin oak	*Q. palustris* Muenchh.
Chinkapin	*Castanopsis* (D. Don) Spach	Willow oak	*Q. phellos* L.
Catalpa	*Catalpa* spp. Scop.	Chestnut oak	*Q. prinus* L.
Sugarberry	*Celtis laevigata* Willd.	Northern red oak	*Q. rubra* L.
Hackberry	*C. occidentalis* L.	Shumard oak	*Q. shumardii* Buckl.
Eastern redbud	*Cercis canadensis* L.	Post oak	*Q. stellata* Wangenh.
Flowering dogwood	*Cornus florida* L.	Black oak	*Q. velutina* Lam.
Hawthorn	*Crataegus* spp. L.	Live oak	*Q. virginiana* Mill.
Common persimmon	*Diospyros virginiana* L.	Black locust	*Robinia pseudoacacia* L.
American beech	*Fagus grandifolia* Ehrh.	Willow	*Salix* spp. L.
White ash	*Fraxinus americana* L.	Sassafras	*Sassafras albidum* (Nutt.) Nees
Pumpkin ash	*F. profunda* (Bush) Bush	American basswood	*Tilia americana* L.
Blue ash	*F. quadrangulata* Michx.	White basswood	*T. heterophylla* Vent.
Waterlocust	*Gleditsia aquatica* Marsh.	Winged elm	*Ulmus alata* Michx.
Honeylocust	*G. triacanthos* L.	American elm	*U. americana* L.
Loblolly-bay	*Gordonia lasianthus* (L.) Ellis	Slippery elm	*U. rubra* Muhl.
American holly	*Ilex opaca* Ait.	September elm	*U. serotina* Sarg.
Black walnut	*Juglans nigra* L.		

[a] Common and scientific names of tree species ≥1.0 inch d.b.h. occurring in the FIA sample.

[b] Little (1979).

Appendix

Index of Tables

Table A.1—Output of industrial products by product and species group, Virginia, 2005 and 2007

Product and species group	Year 2005	2007	Change	Change
	- - - - - *thousand cubic feet* - - - - -			*percent*
Saw logs				
Softwood	106,728	99,859	-6,869	-6.4
Hardwood	121,439	119,406	-2,033	-1.7
Total	228,167	219,265	-8,902	-3.9
Veneer logs				
Softwood	11,265	12,754	1,489	13.2
Hardwood	4,915	4,142	-773	-15.7
Total	16,180	16,896	716	4.4
Pulpwood[a]				
Softwood	96,316	84,676	-11,640	-12.1
Hardwood	103,385	77,604	-25,781	-24.9
Total	199,701	162,280	-37,421	-18.7
Composite panels				
Softwood	53,151	50,556	-2,595	-4.9
Hardwood	4,176	3,564	-612	-14.7
Total	57,327	54,120	-3,207	-5.6
Other industrial				
Softwood	1,013	5,549	4,536	447.8
Hardwood	392	5,897	5,505	1,404.3
Total	1,405	11,446	10,041	714.7
All industrial				
Softwood	268,473	253,394	-15,079	-5.6
Hardwood	234,307	210,613	-23,694	-10.1
Total	502,780	464,007	-38,773	-7.7

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,657,000 cubic feet in 2005 and 3,436,000 cubic feet in 2007).

Table A.2—Roundwood receipts by product and species group, Virginia, 2005 and 2007

Product and species group	Year			
	2005	2007	Change	Change
	- - - - - *thousand cubic feet* - - - - -			*percent*
Saw logs				
Softwood	105,637	92,735	-12,902	-12.2
Hardwood	124,912	121,275	-3,637	-2.9
Total	230,549	214,010	-16,539	-7.2
Veneer logs				
Softwood	17,949	16,359	-1,590	-8.9
Hardwood	1,898	1,701	-197	-10.4
Total	19,847	18,060	-1,787	-9.0
Pulpwood[a]				
Softwood	73,882	67,709	-6,173	-8.4
Hardwood	128,891	107,295	-21,596	-16.8
Total	202,773	175,004	-27,769	-13.7
Composite panels				
Softwood	55,347	56,301	954	1.7
Hardwood	3,998	3,056	-942	-23.6
Total	59,345	59,357	12	0.0
Other industrial				
Softwood	1,728	6,690	4,962	287.2
Hardwood	414	6,899	6,485	1,566.4
Total	2,142	13,589	11,447	534.4
Total output				
Softwood	254,543	239,794	-14,749	-5.8
Hardwood	260,113	240,226	-19,887	-7.6
Total	514,656	480,020	-34,636	-6.7

0.0 = a value of > 0.0 but < 0.05 for the cell.

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (2,807,000 cubic feet in 2005 and 3,993,000 cubic feet in 2007).

Table A.3—Number of primary wood-using plants by type of mill, Virginia, 1980 to 2007

Type of mill	Year									
	1980	1984	1987	1989	1995	1999	2001	2003	2005	2007
	number									
Sawmills	392	419	355	323	254	254	217	204	168	155
Veneer or plywood mills	12	12	10	10	8	7	5	5	4	4
Pulpmills	9	9	9	9	9	9	9	9	8	8
Composite panel mills	0	0	1	3	3	4	3	3	3	3
Other mills	24	22	19	24	15	16	14	13	13	9
All plants	437	462	394	369	289	290	248	234	196	179

Table A.4—Roundwood receipts by sawmill size, Virginia, 2005 and 2007

Sawmill size class[a]	2005			2007		
	Mills	Volume		Mills	Volume	
mmbf	*number*	*mbf*	*percent*	*number*	*mbf*	*percent*
< 1.0	27	8,624	1	25	9,580	1
1.0–4.99	59	156,433	12	57	152,612	12
5.0–9.99	48	327,958	24	35	243,211	20
> 10	34	846,283	63	38	841,215	67
Total	168	1,339,298	100	155	1,246,618	100

[a] Based on volume received as opposed to actual capacity.

Table A.5—Roundwood receipts by species and type of mill, Virginia, 2007

Species	Type of mill						
			Veneer mills				
	All mills	Sawmills	Pine plywood	Other veneer	OSB and panels	Pulpwood[a]	Other mills
	thousand cubic feet						
Softwood							
Yellow pine	161,355	83,137	16,127	229	56,301	NA	5,561
Eastern white pine	9,173	9,170	0	3	0	NA	0
Cedar	39	39	0	0	0	NA	0
Cypress	227	227	0	0	0	NA	0
Other softwood	1,291	162	0	0	0	NA	1,129
Unclassified	67,709	0	0	0	0	67,709	0
Total softwoods	239,794	92,735	16,127	232	56,301	67,709	6,690
Hardwood							
Blackgum-tupelo	798	590	0	3	205	NA	0
Soft maple	2,737	2,529	0	3	205	NA	0
Sweetgum	3,354	2,989	160	0	205	NA	0
Yellow-poplar	48,606	42,873	0	11	2,441	NA	3,281
Other soft hardwood	4,224	4,224	0	0	0	NA	0
Hickory	3,585	3,569	0	16	0	NA	0
Red oak	33,563	31,036	0	232	0	NA	2,295
White oak	25,094	23,560	0	371	0	NA	1,163
Other hard hardwood	10,970	9,905	0	905	0	NA	160
Unclassified	107,295	0	0	0	0	107,295	0
Total hardwoods	240,226	121,275	160	1,541	3,056	107,295	6,899
All species	480,020	214,010	16,287	1,773	59,357	175,004	13,589

OSB = oriented strand board; NA = not applicable.

[a] Collected only by softwood and hardwood and includes roundwood chipped.

Table A.6—Industrial roundwood movement by year and species group, Virginia, 2005 and 2007

Year	Production	Exported to other States	Retained	Imported from other States	Receipts
	thousand cubic feet				
			Softwood		
2005	268,473	52,988	215,485	39,058	254,543
2007	253,394	49,132	204,262	35,532	239,794
			Hardwood		
2005	234,307	27,309	206,998	53,115	260,113
2007	210,613	24,113	186,500	53,726	240,226
			All species		
2005	502,780	80,297	422,483	92,173	514,656
2007	464,007	73,245	390,762	89,258	480,020

Table A.7—Industrial roundwood movement by product and species group, Virginia, 2007

Product and species group	Production	Exported to other States	Retained	Imported from other states	Receipts
			thousand cubic feet		
Saw logs					
Softwood	99,859	18,654	81,205	11,530	92,735
Hardwood	119,406	7,129	112,277	8,998	121,275
Total	219,265	25,783	193,482	20,528	214,010
Veneer logs					
Softwood	12,754	0	12,754	3,605	16,359
Hardwood	4,142	4,029	113	1,588	1,701
Total	16,896	4,029	12,867	5,193	18,060
Pulpwood[a]					
Softwood	84,676	24,616	60,060	7,649	67,709
Hardwood	77,604	11,738	65,866	41,429	107,295
Total	162,280	36,354	125,926	49,078	175,004
Composite panels					
Softwood	50,556	5,819	44,737	11,564	56,301
Hardwood	3,564	1,217	2,347	709	3,056
Total	54,120	7,036	47,084	12,273	59,357
Other industrial					
Softwood	5,549	43	5,506	1,184	6,690
Hardwood	5,897	0	5,897	1,002	6,899
Total	11,446	43	11,403	2,186	13,589
All products					
Softwood	253,394	49,132	204,262	35,532	239,794
Hardwood	210,613	24,113	186,500	53,726	240,226
Total	464,007	73,245	390,762	89,258	480,020

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills.

Table A.8—Saw-log volume by destination, source, and species group, Virginia, 2007

Destination and source	All species	Species group	
		Softwood	Hardwood
	thousand cubic feet		
Virginia (retained)	193,482	81,205	112,277
Exports to			
Kentucky	739	0	739
North Carolina	23,324	18,367	4,957
Tennessee	1,720	287	1,433
Total	25,783	18,654	7,129
Imports from			
Kentucky	1,105	220	885
Maryland	277	109	168
North Carolina	16,219	10,897	5,322
Tennessee	712	110	602
West Virginia	2,215	194	2,021
Total	20,528	11,530	8,998

Table A.9—Veneer volume by destination, source, and species group, Virginia, 2007

Destination and source	All species	Species group	
		Softwood	Hardwood
	thousand cubic feet		
Virginia (retained)	12,867	12,754	113
Exports to			
Georgia	1,145	0	1,145
Indiana	47	0	47
North Carolina	2,837	0	2,837
Total	4,029	0	4,029
Imports from			
Foreign	2	0	2
Illinois	85	0	85
Indiana	177	2	175
Iowa	136	0	136
Maine	7	0	7
Maryland	8	0	8
Michigan	30	0	30
New Hampshire	19	0	19
New York	27	0	27
North Carolina	3,703	3,578	125
Ohio	191	0	191
Pennsylvania	462	0	462
South Carolina	28	25	3
Tennessee	84	0	84
West Virginia	229	0	229
Wisconsin	5	0	5
Total	5,193	3,605	1,588

Table A.10—Pulpwood volume by destination, source, and species group, Virginia, 2007[a]

Destination and source	All species	Species group	
		Softwood	Hardwood
	thousand cubic feet		
Virginia (retained)	125,926	60,060	65,866
Exports to			
Georgia	113	0	113
Kentucky	41	0	41
Maryland	11,081	7,484	3,597
North Carolina	14,055	12,720	1,335
Ohio	463	463	0
Pennsylvania	4,503	3,929	574
South Carolina	41	20	21
Tennessee	6,057	0	6,057
Total	36,354	24,616	11,738
Imports from			
Alabama	1	1	0
Georgia	379	0	379
Kentucky	42	0	42
Maryland	7	7	0
North Carolina	36,343	7,436	28,907
Pennsylvania	38	0	38
Tennessee	205	0	205
West Virginia	12,063	205	11,858
Total	49,078	7,649	41,429

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills.

Table A.11—Composite panel volume by destination, source, and species group, Virginia, 2007

Destination and source	All species	Species group	
		Softwood	Hardwood
	thousand cubic feet		
Virginia (retained)	47,084	44,737	2,347
Exports to			
North Carolina	5,962	4,966	996
West Virginia	1,074	853	221
Total	7,036	5,819	1,217
Imports from			
North Carolina	12,273	11,564	709
Total	12,273	11,564	709

Table A.12—Other industrial volume by destination, source, and species group, Virginia, 2007[a]

Destination and source	All species	Species group	
		Softwood	Hardwood
	thousand cubic feet		
Virginia (retained)	11,403	5,506	5,897
Exports to			
Kentucky	43	43	0
Total	43	43	0
Imports from			
North Carolina	2,186	1,184	1,002
Total	2,186	1,184	1,002

[a] Includes poles, posts, mulch, firewood, log homes, charcoal, and all other industrial mills.

Table A.13—Primary mill residue volume by roundwood type, species group, and residue type, Virginia, 2007

Roundwood type and species group	All types	Residue type			
		Bark	Coarse	Sawdust	Shavings
		thousand cubic feet			
Saw logs					
Softwood	53,402	6,183	24,070	16,337	6,812
Hardwood	71,711	12,639	34,381	24,542	149
Total	125,113	18,822	58,451	40,879	6,961
Veneer logs					
Softwood	9,764	1,240	6,469	2,055	0
Hardwood	2,006	184	1,670	152	0
Total	11,770	1,424	8,139	2,207	0
Pulpwood					
Softwood	6,598	6,598	0	0	0
Hardwood	13,495	13,495	0	0	0
Total	20,093	20,093	0	0	0
Composite panels					
Softwood	9,374	9,374	0	0	0
Hardwood	689	689	0	0	0
Total	10,063	10,063	0	0	0
Other industrial[a]					
Softwood	4,037	1,962	1,531	544	0
Hardwood	3,995	926	2,221	848	0
Total	8,032	2,888	3,752	1,392	0
Total					
Softwood	83,175	25,357	32,070	18,936	6,812
Hardwood	91,896	27,933	38,272	25,542	149
Total	175,071	53,290	70,342	44,478	6,961

[a] Includes poles, pilings, posts, and all other industrial products.

Table A.14—Disposal of residue at primary wood-using plants by product, species group, and type of residue, Virginia, 2005 and 2007

Product and species group	All types		Bark		Coarse		Sawdust		Shavings	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
	thousand cubic feet									
Fiber products										
Softwood	25,289	26,360	0	0	25,271	26,360	0	0	18	0
Hardwood	27,330	27,074	0	0	26,699	26,443	631	631	0	0
Total	52,619	53,434	0	0	51,970	52,803	631	631	18	0
Particleboard										
Softwood	9,077	4,881	0	0	3,634	548	2,021	1,644	3,422	2,689
Hardwood	3,829	2,999	0	0	3,010	2,311	786	660	33	28
Total	12,906	7,880	0	0	6,644	2,859	2,807	2,304	3,455	2,717
Charcoal/ chemical wood										
Softwood	64	35	0	0	0	0	64	35	0	0
Hardwood	814	560	0	0	347	323	467	237	0	0
Total	878	595	0	0	347	323	531	272	0	0
Sawn products										
Softwood	3,216	2,927	0	0	3,216	2,927	0	0	0	0
Hardwood	31	1,379	0	0	31	1,379	0	0	0	0
Total	3,247	4,306	0	0	3,247	4,306	0	0	0	0
Industrial fuel										
Softwood	38,699	36,893	20,714	19,913	599	1,865	16,919	14,857	467	258
Hardwood	40,180	40,830	18,589	17,288	2,693	4,920	18,849	18,578	49	44
Total	78,879	77,723	39,303	37,201	3,292	6,785	35,768	33,435	516	302
Miscellaneous										
Softwood	11,778	11,579	6,009	5,428	430	315	1,636	1,971	3,703	3,865
Hardwood	18,768	17,772	11,624	10,535	2,852	2,582	4,208	4,578	84	77
Total	30,546	29,351	17,633	15,963	3,282	2,897	5,844	6,549	3,787	3,942
Not used										
Softwood	296	500	17	16	60	55	219	429	0	0
Hardwood	1,079	1,282	136	110	394	314	549	858	0	0
Total	1,375	1,782	153	126	454	369	768	1,287	0	0
All products										
Softwood	88,419	83,175	26,740	25,357	33,210	32,070	20,859	18,936	7,610	6,812
Hardwood	92,031	91,896	30,349	27,933	36,026	38,272	25,490	25,542	166	149
Total	180,450	175,071	57,089	53,290	69,236	70,342	46,349	44,478	7,776	6,961

Table A.15—Roundwood timber product output by county, product, and species group, Virginia, 2007

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	thousand cubic feet											
Albemarle	3,961	2,244	2,632	1,574	0	0	1,272	670	0	0	57	0
Alleghany	917	3,980	350	2,048	0	18	197	1,381	0	0	370	533
Amelia	5,467	3,767	3,419	2,557	645	0	213	1,143	1,144	0	46	67
Amherst	1,072	3,723	248	2,562	0	0	630	1,155	194	6	0	0
Appomattox	3,736	2,180	949	1,337	0	5	1,381	765	1,360	6	46	67
Augusta	356	2,587	264	2,288	0	0	75	280	17	0	0	19
Bath	248	2,135	42	1,159	0	16	192	960	0	0	14	0
Bedford	2,167	5,643	803	2,965	0	3	364	1,932	583	143	417	600
Bland	339	2,123	333	1,896	0	0	6	227	0	0	0	0
Botetourt	665	4,325	164	2,539	0	2	455	1,717	0	0	46	67
Brunswick	21,157	4,784	5,515	2,416	1,613	169	7,325	2,139	6,667	60	37	0
Buchanan	93	1,214	0	1,076	0	0	0	4	0	0	93	134
Buckingham	15,063	6,115	3,634	1,637	0	0	8,252	4,472	2,893	6	284	0
Campbell	8,204	6,122	1,827	2,136	0	2	1,475	2,977	4,253	74	649	933
Caroline	4,275	2,044	2,375	1,593	0	0	1,900	451	0	0	0	0
Carroll	3,710	3,264	3,124	2,766	0	0	60	284	526	214	0	0
Charles City	2,208	1,585	892	1,225	648	254	617	99	0	0	51	7
Charlotte	9,251	6,857	2,836	3,492	0	0	2,430	2,794	3,606	31	379	540
Chesapeake	1,050	407	933	64	0	0	117	343	0	0	0	0
Chesterfield	2,046	822	512	569	645	0	889	253	0	0	0	0
Clarke	0	529	0	527	0	2	0	0	0	0	0	0
Craig	111	830	0	39	0	0	111	791	0	0	0	0
Culpeper	638	856	260	668	0	0	378	188	0	0	0	0
Cumberland	4,155	2,251	1,079	609	1	0	2,312	1,631	763	0	0	11
Dickenson	0	7,852	0	1,708	0	0	0	6,144	0	0	0	0
Dinwiddie	10,102	2,612	3,075	1,181	806	0	5,486	1,407	726	24	9	0
Essex	1,010	789	810	767	0	0	136	15	0	0	64	7
Fairfax	102	564	0	58	0	5	102	501	0	0	0	0
Fauquier	362	507	183	413	0	0	179	94	0	0	0	0
Floyd	1,936	3,081	1,926	3,056	0	12	10	13	0	0	0	0
Fluvanna	1,583	594	454	59	0	0	1,129	535	0	0	0	0
Franklin	2,726	5,647	1,224	3,650	0	3	654	1,854	755	6	93	134
Frederick	376	570	0	184	0	6	368	380	8	0	0	0
Giles	358	2,655	358	2,626	0	0	0	29	0	0	0	0
Gloucester	628	1,035	597	1,024	1	0	27	11	0	0	3	0
Goochland	940	485	96	131	0	0	844	354	0	0	0	0
Grayson	1,241	1,605	816	1,370	0	0	1	81	424	154	0	0
Greene	0	298	0	260	0	0	0	38	0	0	0	0
Greensville	7,679	3,361	1,999	989	806	184	3,230	2,116	1,635	72	9	0
Halifax	12,074	8,631	5,979	3,377	645	183	306	2,963	4,765	1,575	379	533
Hampton	0	268	0	261	0	0	0	7	0	0	0	0
Hanover	3,530	984	1,462	720	0	0	2,065	261	0	0	3	3
Henrico	204	79	144	73	0	0	60	6	0	0	0	0
Henry	2,566	3,107	1,411	1,780	0	5	491	1,010	525	112	139	200
Highland	121	1,151	0	572	0	15	121	564	0	0	0	0
Isle of Wight	4,446	2,302	1,639	597	645	0	1,727	1,681	363	24	72	0
James City	569	159	550	124	0	0	19	35	0	0	0	0
King and Queen	2,672	1,074	1,158	926	645	0	466	124	363	24	40	0
King George	292	984	74	911	0	0	218	73	0	0	0	0
King William	2,370	1,193	1,088	1,165	0	0	1,179	28	0	0	103	0

continued

Table A.15—Roundwood timber product output by county, product, and species group, Virginia, 2007 (continued)

County	All products		Saw logs		Veneer logs		Pulpwood[a]		Composite panels		Other industrial	
	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood	Soft-wood	Hard-wood
	thousand cubic feet											
Lancaster	384	425	328	422	0	0	11	3	0	0	45	0
Lee	296	1,765	164	1,409	0	356	89	0	0	0	43	0
Loudoun	0	886	0	837	0	0	0	49	0	0	0	0
Louisa	2,320	1,661	1,325	1,131	0	0	910	484	0	0	85	46
Lunenburg	7,685	2,767	3,932	1,159	1,291	183	1,116	1,407	1,346	18	0	0
Madison	33	792	0	697	0	0	33	95	0	0	0	0
Mathews	291	231	280	228	0	0	11	3	0	0	0	0
Mecklenburg	6,455	4,370	2,040	2,561	806	169	684	1,457	2,832	49	93	134
Middlesex	341	372	312	360	3	0	12	5	0	0	14	7
Montgomery	423	1,703	418	1,494	0	0	5	209	0	0	0	0
Nelson	1,545	3,070	182	2,484	0	0	888	574	418	12	57	0
New Kent	390	939	350	922	0	0	24	14	0	0	16	3
Newport News	7	97	0	86	0	0	7	11	0	0	0	0
Northampton	0	88	0	0	0	0	0	4	0	84	0	0
Northumberland	1,797	944	1,749	785	0	0	3	159	0	0	45	0
Nottoway	5,790	2,522	2,650	1,386	645	5	1,527	1,113	950	18	18	0
Orange	1,891	1,192	1,153	657	0	0	560	347	93	150	85	38
Page	164	345	0	147	0	0	164	198	0	0	0	0
Patrick	1,728	6,221	683	3,279	0	0	583	2,708	369	100	93	134
Pittsylvania	14,916	9,039	4,594	2,573	0	113	2,986	5,271	6,687	149	649	933
Powhatan	2,729	1,367	522	603	1	0	2,206	757	0	0	0	7
Prince Edward	3,402	3,269	1,141	1,446	0	0	703	1,756	1,512	0	46	67
Prince George	2,686	1,229	499	954	806	0	1,200	260	181	12	0	3
Prince William	164	216	0	80	0	0	164	136	0	0	0	0
Pulaski	157	401	157	393	0	0	0	8	0	0	0	0
Rappahannock	0	448	0	436	0	0	0	12	0	0	0	0
Richmond	748	1,231	599	695	0	0	120	536	0	0	29	0
Roanoke	235	883	149	392	0	0	40	424	0	0	46	67
Rockbridge	729	3,838	255	1,966	0	16	460	1,837	0	0	14	19
Rockingham	105	924	37	784	0	0	68	121	0	0	0	19
Russell	174	2,935	174	2,256	0	549	0	130	0	0	0	0
Scott	329	3,208	329	1,898	0	1,310	0	0	0	0	0	0
Shenandoah	189	488	15	290	0	0	174	198	0	0	0	0
Smyth	609	2,849	248	2,529	0	0	0	213	361	107	0	0
Southampton	14,251	6,038	6,198	1,477	484	21	5,835	4,456	1,635	84	99	0
Spotsylvania	4,301	1,620	2,842	1,158	0	0	1,459	430	0	0	0	32
Stafford	456	1,617	256	1,094	0	0	200	523	0	0	0	0
Suffolk	4,843	2,282	2,617	505	0	11	2,008	1,754	181	12	37	0
Surry	3,510	2,207	302	1,423	645	0	2,355	772	181	12	27	0
Sussex	15,803	3,047	5,075	1,364	973	169	7,858	1,442	1,816	72	81	0
Tazewell	456	2,930	85	2,131	0	0	1	266	0	0	370	533
Virginia Beach	392	139	0	52	0	0	392	87	0	0	0	0
Warren	118	832	0	562	0	0	118	270	0	0	0	0
Washington	105	1,560	105	1,164	0	356	0	40	0	0	0	0
Westmoreland	684	399	297	395	0	0	233	4	0	0	154	0
Wise	109	2,081	109	2,041	0	0	0	40	0	0	0	0
Wythe	878	1,172	454	977	0	0	0	41	424	154	0	0
All counties	253,394	210,613	99,859	119,406	12,754	4,142	84,676	77,604	50,556	3,564	5,549	5,897

[a] Includes roundwood delivered to nonpulpmills, then chipped and sold to pulpmills (3,436,000 cubic feet in 2007).

Table A.16—Total roundwood output by product, species group, and source of material, Virginia, 2007

Product and species group	All sources	Growing-stock trees			Other sources
		Total	Sawtimber	Poletimber	
	thousand cubic feet				
Saw logs					
Softwood	99,859	97,489	93,601	3,887	2,370
Hardwood	119,406	115,770	109,743	6,028	3,636
Total	219,265	213,259	203,344	9,915	6,006
Veneer logs and bolts					
Softwood	12,754	12,466	12,179	288	288
Hardwood	4,142	4,065	3,896	169	77
Total	16,896	16,531	16,075	456	365
Pulpwood					
Softwood	84,676	75,991	32,735	43,257	8,685
Hardwood	77,604	73,807	33,262	40,546	3,797
Total	162,280	149,799	65,996	83,803	12,481
Composite panels					
Softwood	50,556	45,379	20,874	24,505	5,177
Hardwood	3,564	3,389	1,519	1,870	175
Total	54,120	48,768	22,394	26,375	5,352
Poles and posts					
Softwood	1,570	1,289	1,178	111	281
Hardwood	69	58	42	16	11
Total	1,639	1,348	1,220	127	291
Other miscellaneous					
Softwood	3,979	3,527	2,519	1,008	452
Hardwood	5,828	5,302	3,787	1,515	526
Total	9,807	8,829	6,305	2,524	978
Total industrial products					
Softwood	253,394	236,142	163,085	73,056	17,252
Hardwood	210,613	202,392	152,248	50,143	8,221
Total	464,007	438,533	315,334	123,200	25,474
Domestic fuelwood					
Softwood	3,885	3,535	2,547	989	350
Hardwood	35,023	31,487	22,686	8,801	3,536
Total	38,908	35,022	25,232	9,790	3,886
All products					
Softwood	257,279	239,677	165,632	74,045	17,602
Hardwood	245,636	233,878	174,934	58,944	11,758
Total	502,915	473,555	340,566	132,989	29,360

Numbers in rows and columns may not sum to totals due to rounding.

Table A.17—Total roundwood output by species group, survey region, and ownership class, Virginia, 2007

Species group and survey region	Total	Ownership class		
		Public	Forest industry	Nonindustrial private
		thousand cubic feet		
Softwoods				
Coastal Plain	112,054	582	15,617	95,856
Southern Piedmont	109,772	3,721	6,854	99,198
Northern Piedmont	19,667	190	2,462	17,015
Northern Mountain	4,402	79	0	4,323
Southern Mountain	11,384	113	463	10,808
Total softwoods	257,279	4,685	25,395	227,199
Hardwoods				
Coastal Plain	51,493	1,854	2,992	46,647
Southern Piedmont	93,156	3,861	7,841	81,454
Northern Piedmont	24,228	3,557	1,729	18,942
Northern Mountain	27,310	2,558	399	24,353
Southern Mountain	49,449	960	312	48,176
Total hardwoods	245,636	12,790	13,274	219,572
All species	502,915	17,475	38,669	446,771

Numbers in rows and columns may not sum to totals due to rounding.

Table A.18—Total roundwood output by species group, detailed species group, and product, Virginia, 2007

Species group and detailed species group	Total	Product						
		Saw logs	Veneer logs	Pulpwood	Composite panels	Poles and posts	Other miscellaneous	Domestic fuelwood
		thousand cubic feet						
Softwood								
Cedar	9,186	5,052	679	1,577	1,453	5	281	138
Eastern white pine	11,893	8,273	0	1,229	1,889	20	302	179
Loblolly-shortleaf pine	189,849	69,266	11,878	65,631	37,241	1,220	1,748	2,865
Other yellow pines	45,190	16,929	196	15,866	9,915	324	1,275	684
Cypress	35	17	0	16	1	0	0	1
Hemlock	1,126	322	0	357	57	0	373	17
Total softwoods	257,279	99,859	12,754	84,676	50,556	1,570	3,979	3,885
Hardwood								
Soft maple	18,066	8,404	357	6,201	212	6	310	2,576
Hard maple	1,106	631	12	264	7	0	33	158
Yellow birch	197	157	1	8	0	0	3	28
Hickory	11,636	5,587	223	3,692	175	2	297	1,659
Beech	2,555	926	43	1,188	5	3	25	364
Ash	4,122	2,351	111	1,048	4	1	19	588
Black walnut	3,704	1,909	1,121	142	3	0	2	528
Sweetgum	16,702	6,401	226	7,036	400	3	256	2,381
Yellow-poplar	65,274	32,449	872	20,057	941	21	1,627	9,307
Blackgum-tupelo	2,963	1,392	45	976	43	1	84	423
Sycamore	2,587	1,316	39	815	17	0	32	369
Cottonwood	2,037	949	6	679	16	1	95	290
Black cherry	3,196	1,876	138	624	50	0	52	456
Select white oaks	29,399	13,723	229	9,985	664	12	595	4,191
Other white oaks	19,608	9,101	243	6,339	136	0	993	2,796
Select red oaks	9,981	3,903	72	4,290	106	8	179	1,423
Other red oaks	35,054	18,836	313	9,767	664	11	465	4,998
Basswood	2,551	1,937	4	233	0	0	13	364
Elm	1,199	538	15	412	29	0	34	171
Other eastern hardwoods	13,700	7,018	73	3,848	93	1	715	1,953
Total hardwoods	245,636	119,406	4,142	77,604	3,564	69	5,828	35,023
All species	502,915	219,265	16,896	162,280	54,120	1,639	9,807	38,908

Numbers in rows and columns may not sum to totals due to rounding.

Table A.19—Total roundwood output by species group, detailed species group, and ownership class, Virginia, 2007

Species group and detailed species group	Total	Ownership class		
		Public	Forest industry	Nonindustrial private
		thousand cubic feet		
Softwood				
Cedar	9,186	68	66	9,052
Eastern white pine	11,893	71	53	11,769
Loblolly-shortleaf pine	189,849	3,529	19,667	166,652
Other yellow pines	45,190	915	5,133	39,143
Cypress	35	0	13	22
Hemlock	1,126	102	463	562
Total softwoods	257,279	4,685	25,395	227,199
Hardwood				
Soft maple	18,066	1,298	545	16,223
Hard maple	1,106	66	14	1,026
Yellow birch	197	18	2	177
Hickory	11,636	685	420	10,532
Beech	2,555	166	342	2,047
Ash	4,122	293	41	3,788
Black walnut	3,704	51	4	3,649
Sweetgum	16,702	252	912	15,539
Yellow-poplar	65,274	2,819	4,867	57,587
Blackgum-tupelo	2,963	311	258	2,394
Sycamore	2,587	397	355	1,835
Cottonwood	2,037	4	133	1,899
Black cherry	3,196	285	77	2,834
Select white oaks	29,399	2,812	877	25,709
Other white oaks	19,608	1,947	436	17,225
Select red oaks	9,981	171	782	9,028
Other red oaks	35,054	919	2,966	31,169
Basswood	2,551	38	0	2,513
Elm	1,199	161	49	989
Other eastern hardwoods	13,700	97	195	13,408
Total hardwoods	245,636	12,790	13,274	219,572
All species	502,915	17,475	38,669	446,771

Numbers in rows and columns may not sum to totals due to rounding.

Cooper, Jason A.; Becker, Charles W. 2009. Virginia's timber industry—an assessment of timber product output and use, 2007. Resour. Bull. SRS–155. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 33 p.

In 2007, roundwood output from Virginia's forests decreased 8 percent to 464 million cubic feet. Mill byproducts generated from primary manufacturers totaled 175 million cubic feet, 3 percent less than in 2005. Seventy-five percent of the plant residues were used primarily for fuel and fiber products. Saw logs were the leading roundwood product at 219 million cubic feet; pulpwood ranked second at 162 million cubic feet; composite panels were third at 54 million cubic feet. The number of primary processing plants declined from 196 in 2005 to 179 in 2007. Total receipts decreased 7 percent to 480 million cubic feet.

Keywords: FIA, pulpwood, residues, roundwood, saw logs, veneer logs, wood movement.

The Forest Service, U.S. Department of Agriculture (USDA) is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.